

WHAT IS CLAIMED IS:

1. A method for producing an electron-emitting device comprising an electroconductive film having an electron-emitting region between electrodes, wherein a  
5 step of forming said electron-emitting region in the electroconductive film comprises a step of heating the electroconductive film and a step of energizing the electroconductive film, in an atmosphere in which a gas  
10 for promoting cohesion of the electroconductive film exists.

2. A method for producing an electron-emitting device comprising an electroconductive film having an electron-emitting region between electrodes, wherein a  
15 step of forming said electron-emitting region in the electroconductive film comprises a step of energizing the electroconductive film while heating the electroconductive film, in an atmosphere in which a gas  
20 for promoting cohesion of the electroconductive film exists.

3. The method according to Claim 1 or 2, wherein the gas for promoting the cohesion of the electroconductive film is a reducing gas.

4. The method according to Claim 1 or 2, wherein the gas for promoting the cohesion of the

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B2

Sub  
B2  
cont.

50b  
Concluded

electroconductive film is either one selected from H<sub>2</sub>, CO, and CH<sub>4</sub>.

5 The method according to Claim 1 or 2, wherein the gas for promoting the cohesion of the electroconductive film is H<sub>2</sub>.

6 The method according to Claim 1 or 2, wherein heating of said electroconductive film is effected by heating a substrate on which the electroconductive film is placed.

7 The method according to Claim 6, wherein the heating of the substrate is carried out at a temperature not more than 100 °C.

8 The method according to Claim 6, wherein the heating of said substrate is carried out at a temperature in the range of 50 °C to 100 °C.

9 The method according to Claim 1 or 2, wherein said electroconductive film is an electroconductive film formed through a step of dispensing a droplet containing a metallic compound onto a substrate.

10 The method according to Claim 9, wherein the dispensing of the droplet onto the substrate is carried

out by an ink jet method.

5 11. The method according to Claim 1 or 2, wherein said electroconductive film is an electroconductive film comprising a metallic oxide as a matrix.

12. The method according to Claim 11, wherein said metallic oxide is palladium oxide.

10 13. The method according to Claim 1 or 2, wherein said electron-emitting device is a surface conduction electron-emitting device.

15 14. A method for producing an electron source having a plurality of electron-emitting devices, wherein said electron-emitting devices are produced by ~~either one selected from the methods as set forth in~~ <sup>either</sup> Claims 1 <sup>or 2</sup> ~~to 13.~~

20 15. A method for producing an image-forming apparatus comprising an electron source having a plurality of electron-emitting devices and an image-forming member for forming an image under irradiation of electrons from the electron source, wherein said  
25 electron-emitting devices are produced by ~~either one selected from the methods as set forth in~~ <sup>Claim 1 or 2</sup> ~~Claims 1 to~~ 13.

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